



Attorney Docket No. IMMR-023/04US

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of David ALEXANDER *et al.*

Serial No.: 10/657,145

Examiner: John Sotomayor

Confirmation No.: 1899

Art Unit: 3714

Filed: September 9, 2003

For: **INTERFACE DEVICE AND METHOD FOR INTERFACING
INSTRUMENTS TO MEDICAL PROCEDURE SIMULATION SYSTEMS**

U.S. Patent and Trademark Office
220 20TH Street South
Customer Window, Mail Stop Amendment
Crystal Plaza Two, Lobby, Room 1B03
Arlington, VA 22202

INFORMATION DISCLOSURE STATEMENT TRANSMITTAL

Enclosed is an Information Disclosure Statement and accompanying Form PTO/SB/08A for the above-identified patent application.

- ☐ In accordance with 37 C.F.R. §1.97(b), no additional fee for submission of the IDS is required.
- ☒ In accordance with 37 C.F.R. §1.97(c), also enclosed is:
 - ☒ the fee of \$180.00 as set forth in 37 C.F.R. §1.17(p); or
 - ☐ a statement as specified in 37 C.F.R. §1.97(e).
- ☐ In accordance with 37 C.F.R. §1.97(d), a statement as specified in 37 C.F.R. §1.97(e) and the fee of \$180.00 as set forth in 37 C.F.R. §1.17(p) are also enclosed.
- ☒ Check in the amount of \$180.00 is attached.
- ☐ A return receipt postcard is also enclosed.
- ☐ Please charge \$___ to Deposit Account No. 50-1283 for the total fee. This paper is being submitted in duplicate.

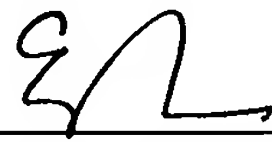
The Commissioner is hereby authorized to charge any appropriate fees under 37 C.F.R. §§1.16, 1.17, and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 50-1283.

Dated: September 15, 2004

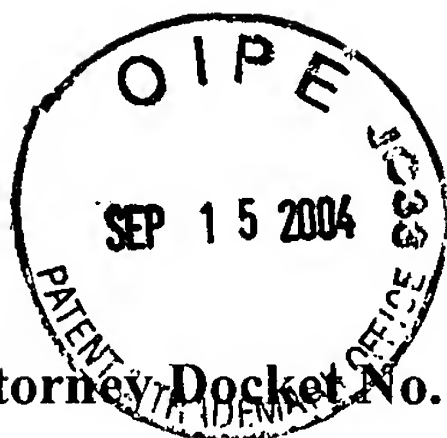
Cooley Godward LLP
ATTN: Patent Group
One Freedom Square
Reston Town Center
11951 Freedom Drive
Reston, VA 20190-5656
Tel: (703) 456-8000
Fax: (703) 456-8100

Respectfully submitted,
COOLEY GODWARD LLP

By:



Erik B. Milch
Reg. No. 42,887



Attorney Docket No. IMMR-023/04US

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of David ALEXANDER *et al.*

Serial No.: 10/657,145

Examiner: John Sotomayor

Confirmation No.: 1899

Art Unit: 3714

Filed: September 9, 2003

For: **INTERFACE DEVICE AND METHOD FOR INTERFACING
INSTRUMENTS TO MEDICAL PROCEDURE SIMULATION SYSTEMS**

U.S. Patent and Trademark Office
220 20TH Street South
Customer Window, Mail Stop Amendment
Crystal Plaza Two, Lobby, Room 1B03
Arlington, VA 22202

**INFORMATION DISCLOSURE STATEMENT
UNDER 37 C.F.R. §1.97(c)**

In accordance with the duty of disclosure set forth in 37 C.F.R. §1.56, Applicant(s) hereby submits the following information in conformance with 37 C.F.R. §§1.97 and 1.98.

- ☒ Pursuant to 37 C.F.R. §1.98, copies of the U.S. patent application publication documents cited in the attached Form PTO/SB/08 (1 of 2) are provided on the enclosed CD.
- ☒ No copies of the publications listed on the attached Form PTO/SB/08A (2 of 2) are being provided pursuant to 37 C.F.R. §1.98(d) because the publications were previously cited by or submitted to the Office in prior Application Serial No., 09/237,969, filed January 27, 1999, to which the above-identified application claims priority under 35 U.S.C. §120.
- ☐ No copies of any U.S. patents or U.S. patent application publications listed on the attached Form PTO/SB/08A are being provided pursuant to 37 C.F.R. §1.98 because this application was filed after June 30, 2003.
- ☐ Publication(s) ___ listed on the attached Form PTO/SB/08A were cited in a foreign search or examination report corresponding to ___ application serial no. and mailed on ___.
- ☐ Enclosed is a copy of a non-English publication(s) ___. Pursuant to §609 of the M.P.E.P., Applicant submits the attached foreign search or examination report, which cites such non-English language publication(s).

- ☐ Enclosed is a copy of a non-English publication(s) _____. English language publication ____ (copy enclosed) claims priority from this non-English publication.
- ☐ Enclosed is an explanation of non-English publication(s) ____ for which an English translation is not available.
- ☐ Enclosed is an English translation of non-English publication(s) ____ cited in the attached Form PTO/SB/08A.
- ☐ Enclosed is a copy of pending patent Application Serial No. _____.

This Information Disclosure Statement is filed after the period specified in 37 C.F.R. § 1.97(b), but before the mailing of:

- ☒ a final action under 37 C.F.R. §1.113;
- ☐ a notice of allowance under 37 C.F.R. §1.311; or
- ☐ an action that otherwise closes prosecution in this application.

In accordance with 37 C.F.R. §1.97(c) also enclosed is:

- ☒ Fee under 37 C.F.R. §1.17(p) in the amount of \$180.00; or
- ☐ Statement as specified in 37 C.F.R. §1.97(e):
 - ☐ Each item of information contained in the Information Disclosure Statement cited herein was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing date of the Information Disclosure Statement; or
 - ☐ No item of information contained in the Information Disclosure Statement submitted herewith was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned, having made a reasonable inquiry, no item of information contained in the Information Disclosure Statement was known to any individual designated in 37 C.F.R. §1.56(c) more than three months prior to the filing date of the Information Disclosure Statement.


It is respectfully requested that the Examiner consider the above-noted information and return an initialed copy of the attached Form PTO/SB/08A to the undersigned.

Dated: September 15, 2004

Cooley Godward LLP
ATTN: Patent Group
One Freedom Square
Reston Town Center
11951 Freedom Drive
Reston, VA 20190-5656
Tel: (703) 456-8000
Fax: (703) 456-8100

Respectfully submitted,
COOLEY GODWARD LLP

By:



Erik B. Milch
Reg. No. 42,887



(1 of 2)

PTO/SB/08A (10-01)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 1 of 3

Complete if Known

Application Number	10/657,145
Filing Date	September 9, 2003
First Named Inventor	David Alexander
Art Unit	3714
Examiner Name	John Sotomayor
Attorney Docket Number	IMMR023/04US

U.S. PATENT DOCUMENTS

Examiner	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number Kind Code ² (if known)			
		6,422,941	7/23/2002	Thorner et al.	
		6,160,489	12/12/2000	Perry et al.	
		6,111,577	8/29/2000	Zilles et al.	
		6,086,528	07/11/2000	Adair	
		5,817,107	10/6/1998	Schaller	
		5,690,582	11/25/1997	Ulrich et al.	
		5,575,761	11/19/1996	Hajianpour	
		5,437,607	8/1/1995	Taylor	
		5,436,622	7/25/1995	Gutman et al.	
		5,283,970	2/8/1994	Aigner	
		5,186,695	2/16/1993	Mangseth et al.	
		5,175,459	12/29/1992	Danial et al.	
		5,165,897	11/24/1992	Johnson	
		5,022,384	6/11/1991	Freels	
		4,885,565	12/5/1989	Embach	
		4,484,191	11/20/1984	Vavra	
		4,464,117	8/7/1984	Foerst	
		4,439,162	03/27/1984	Blaine	
		4,333,070	6/1/1982	Barnes	
		4,262,549	4/21/1981	Schwellenbach	
		4,127,752	11/28/1978	Lowthorp	
		2,972,140	2/14/1961	Hirsch	

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code ³	Number ⁴	Kind Code ⁵ (if known)			
		JP	H2-185278		7/19/1990	Taito Corporation	
		JP	H4-8381		1/13/1992	Epoch Co. and Key- Planning Co.	
		JP	H7-24147		1/27/1995	Sega Corporation	
		JP	H5-192449		8/3/1993	Taito Corporation	

Examiner
SignatureDate
Considered

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Kind Codes of U.S. Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	10/657,145
		Filing Date	September 9, 2003
		First Named Inventor	David Alexander
		Art Unit	3714
		Examiner Name	John Sotomayor
Sheet 2 of 3	Attorney Docket Number	IMMR023/04US	

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	
		PATRICK, "Design, Construction, and Testing of a Fingertip Tactile Display for Interaction with Virtual and Remote Environments," <i>Master of Science Thesis</i> , MIT, Aug. 1990, archived Nov. 8, 1990.	
		CALDER, "Design of A Force-Feedback Touch-Introducing Actuator For Teleoperator Robot Control," <i>Bachelor of Science Thesis</i> , MIT, May 1983, archived June 23, 1983.	
		WIKER, "Teletouch Display Development: Phase 1 Report," <i>Technical Report 1230</i> , Naval Ocean Systems Center, San Diego, July 1988.	
		BLISS, "Optical-to-Tactile Image Conversion for the Blind," <i>IEEE Transactions on Man-Machine Systems</i> , Vol. MMS-11, No. 1, March 1970.	
		JOHNSON, "Shape-Memory Alloy Tactile Feedback Actuator," <i>Armstrong Aerospace Medical Research Laboratory</i> , AAMRL-TR-90-039, August, 1990.	
		KONTARINIS et al., "Tactile Display of Vibratory Information in Teleoperation and Virtual Environments," <i>PRESENCE</i> , 4(4):387-402, Harvard Univ., 1995.	
		AUKSTAKALNIS et al., "Silicon Mirage: The Art and Science of Virtual Reality," ISBN 0-938151-82-7, pp. 129-180, 1992.	
		EBERHARDT et al., "Inducing Dynamic Haptic Perception by The Hand: System Description and Some Results," DSC-Vol. 55-1, <i>Dynamic Systems and Control: Volume 1</i> , ASME 1994.	
		GOBEL et al., "Tactile Feedback Applied to Computer Mice," <i>International Journal of Human-Computer Interaction</i> , Vol. 7, No. 1, pp. 1-24, 1995.	
		PIMENTEL et al., "Virtual Reality: through the new looking glass," 2 nd Edition; McGraw-Hill, ISBN 0-07-050167-X, pp. 41-202, 1994.	
		"Cyberman Technical Specification," <i>Logitech Cyberman SWIFT Supplement to Logitech Mouse Technical Reference and Programming Guide</i> , 4/5/1994.	
		OUHYOUNG et al., "The Development of A Low-Cost Force Feedback Joystick and Its Use in the Virtual Reality Environment," <i>Proceedings of the Third Pacific Conference on Computer Graphics and Applications, Pacific Graphics '95</i> , Seoul, Korea, 21-24 August 1995.	
		KACZMAREK et al., "Tactile Displays," <i>Virtual Environment Technologies</i> , Chap. 9, pp. 349-414.	
		LAKE, "Cyberman from Logitech," at http://www.ibiblio.org/GameBytes/issue21/greviews/cyberman.html , 1994.	
		"Component Maintenance Manual With Illustrated Parts List, Coaxial Control Shaker Part No. C-25502," Safe Flight Instrument Corporation, Revised 28 January 2002 (3 pages).	

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	10/657,145
		Filing Date	September 9, 2003
		First Named Inventor	David Alexander
		Art Unit	3714
		Examiner Name	John Sotomayor
Sheet 3 of 3	Attorney Docket Number	IMMR023/04US	

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	
		"Technical Manual Overhaul Instructions With Parts Breakdown, Coaxial Control Shaker Part No. C-25502," Safe Flight Instrument Corporation, Revised 15 July 1980 (23 pages).	
		SCANNELL, "Taking a Joystick Ride," <i>Computer Currents</i> , Boston Edition, Vol. 9, No. 11, November 1994	
		YAMAKITA et al., "Tele-Virtual Reality of Dynamic Mechanical Model," <i>Proceedings of the 1992 IEEE/RSJ International Conference on Intelligent Robots and Systems</i> , Raleigh, NC, July 7-10, 1992	
		NOLL, "Man-Machine Tactile," <i>SID Journal</i> , July/August 1972 Issue.	
		ROSENBERG, "Virtual Fixtures: Perceptual Overlays Enhance Operator Performance In Telepresence Tasks," <i>Ph.D. Dissertation</i> , Stanford University, June 1994.	

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				<i>Complete if Known</i>	
				Application Number	10/657,145
				Filing Date	September 9, 2003
				First Named Inventor	David Alexander
				Group Art Unit	3714
				Examiner Name	John Sotomayor
Sheet	1	of	10	Attorney Docket Number	IMMR023/04US

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
		Number	Kind Code ² (if known)		
		6,223,100		Green	04-2001
		5,995,738		DiGioia, III et al.	11-30-1999
		5,967,790		Strover et al.	10-19-1999
		5,956,040		Asano et al.	09-21-1999
		5,951,301		Younker	09-14-1999
		5,947,743		Hasson	09-07-1999
		5,945,056		Day et al.	08-31-1999
		5,941,710		Lampotang et al.	08-24-1999
		5,909,380		Dubois et al.	06-01-1999
		5,891,131		Rajan et al.	04-06-1999
		5,890,908		Lampotang et al.	04-06-1999
		5,882,207		Lampotang et al.	03-16-1999
		5,882,206		Gillio	03-16-1999
		5,880,976		DiGioia, III et al.	03-09-1999
		5,873,732		Hasson	02-23-1999
		5,873,731		Prendergast	02-23-1999
		5,853,292		Eggert et al.	12-29-1998
		5,828,197		Martin et al.	10-27-1998
		5,825,941		Linford et al.	10-20-1998
		5,825,308		Rosenberg	10-20-1998
		5,821,920		Rosenberg et al.	10-13-1998
		5,807,115		Hu	09-15-1998
		5,805,140		Rosenberg et al.	09-08-1998
		5,800,179		Bailey	09-01-1998
		5,800,178		Gillio	09-01-1998
		5,800,177		Gillio	09-01-1998
		5,791,908		Gillio	08-11-1998
		5,785,630		Bobick, et al.	07/28/1998
		5,769,640		Jacobus et al.	06-23-1998
		5,768,134		Swaelens et al.	06-16-1998
		5,767,839		Rosenberg	06-16-1998
		5,766,016		Sinclair et al.	06/16/1998
		5,755,577		Gillio	05-26-1998
		5,742,278		Chen et al.	04-21-1998
		5,740,802		Nafis et al.	04-21-1998
		5,739,811		Rosenberg et al.	04-14-1998
		5,734,373		Rosenberg et al.	03-31-1998
		5,731,804		Rosenberg	03-24-1998
		5,724,264		Rosenberg et al.	03-03-1998
		5,722,836		Younker	03-03-1998

¹ Unique citation designation number.² See attached Kinds of U.S. Patent Documents.

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				<i>Complete if Known</i>	
				Application Number	10/657,145
				Filing Date	September 9, 2003
				First Named Inventor	David Alexander
				Group Art Unit	3714
				Examiner Name	John Sotomayor
Sheet	2	of	10	Attorney Docket Number	IMMR023/04US

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
		Number	Kind Code ² (if known)		
		5,721,566		Rosenberg et al.	02-24-1998
		5,704,791		Gillio	01-06-1998
		5,701,140		Rosenberg et al.	11-23-1997
		5,691,898		Rosenberg et al.	11-25-1997
		5,687,259		Linford	11-11-1997
		5,682,886		Delp et al.	11-04-1997
		5,666,138		Culver	09-09-1997
		5,629,594		Jacobus et al.	05-13-1997
		5,623,582		Rosenberg	04-22-1997
		5,609,485		Bergman et al.	03-11-1997
		5,593,306		Kohnke	01-14-1997
		5,589,854		Tsai	12-31-1996
		5,576,727		Rosenberg et al.	11-19-1996
		5,559,412		Schuler	09-24-1996
		5,552,995		Sebastian	09-03-1996
		5,547,382		Yamasaki et al.	08/20/1996
		5,546,943		Gould	08-20-1996
		5,531,227		Schneider	07-02-1996
		5,518,406		Waters	05-21-1996
		5,513,992		Refait	05-07-1996
		5,510,832		Garcia	04-23-1996
		5,509,810		Schertz et al.	04-23-1996
		5,483,961		Kelly et al.	01-16-1996
		5,483,254		Powell	01-09-1996
		5,482,472		Garoni et al.	01-09-1996
		5,466,213		Hogan et al.	11/14/1995
		5,459,382		Jacobus et al.	10-17-1995
		5,454,722		Holland et al.	10-03-1995
		5,451,924		Massimino et al.	09-19-1995
		5,438,529		Rosenberg et al.	08-01-1995
		5,414,337		Schuler	05-09-1995
		5,403,191		Tuason	04-04-1995
		5,391,081		Lampotang et al.	02-21-1995
		5,389,865		Jacobus et al.	02-14-1995
		5,385,474		Brindle	01-31-1995
		5,377,116		Wayne et al.	12-27-1994
		5,376,007		Zirm	12-27-1994
		5,354,202		Moncrief et al.	10-11-1994
		5,343,871		Bittman et al.	09-06-1994
		5,338,198		Wu et al.	08-16-1994
		5,334,027		Wherlock	08/02/1994
		5,333,106		Lanpher et al.	07-26-1994
		5,322,441		Lewis et al.	06-21-1994

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				<i>Complete if Known</i>	
				Application Number	10/657,145
				Filing Date	September 9, 2003
				First Named Inventor	David Alexander
				Group Art Unit	3714
				Examiner Name	John Sotomayor
Sheet	3	of	10	Attorney Docket Number	IMMR023/04US

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
		Number	Kind Code ² (if known)		
		5,320,538		Baum	06-14-1994
		5,320,537		Watson et al.	06-14-1994
		5,320,326		Ju et al.	06-14-1994
		5,311,422		Loftin et al.	05-10-1994
		5,309,140		Everett, Jr., et al.	05/03/1994
		5,299,810		Pierce et al.	04/05/1994
		5,295,694		Levin	03-22-1994
		5,275,174		Cook	01/04/1994
		5,273,038		Beavin	12-28-1993
		5,271,290		Fischer	12/21/1993
		5,261,404		Mick et al.	11-16-1993
		5,240,417		Smithson et al.	08/31/1993
		5,222,499		Allen et al.	06-29-1993
		5,220,260		Schuler	06-15-1993
		5,212,473		Louis	05/18/1993
		5,205,289		Hardy et al.	04-27-1993
		5,185,561		Good et al.	02-09-1993
		5,149,270		McKeown	09-22-1992
		5,137,458		Ungs et al.	08-11-1992
		5,130,794		Ritchey	07-14-1992
		5,112,228		Zouras	05-12-1992
		5,099,846		Hardy	03-31-1992
		5,086,401		Glassman et al.	02-04-1992
		5,078,152		Bond et al.	01/07/1992
		5,077,608		Dubner	12-31-1991
		5,044,956		Behensky et al.	09-03-1991
		5,038,089		Szakaly	08/06/1991
		5,035,242		Franklin et al.	07/30/1991
		5,022,407		Horch et al.	06/11/1991
		5,019,761		Kraft	05/28/1991
		4,936,862		Walker et al.	06-26-1990
		4,934,694		McIntosh	06/19/1990
		4,930,770		Baker	06/05/1990
		4,907,973		Hon	03-13-1990
		4,891,764		McIntosh	01/02/1990
		4,879,668		Cline et al.	11-07-1989
		4,867,685		Brush et al.	09-19-1989
		4,867,168		Stoor et al.	09-19-1989
		4,807,158		Blanton et al.	02-21-1989
		4,804,328		Barrabee	02-14-1989
		4,794,392		Selinko	12/27/1988
		4,789,340		Zikria	12-06-1988
		4,773,865		Baldwin	08-27-1988

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				<i>Complete if Known</i>	
				Application Number	10/657,145
				Filing Date	September 9, 2003
				First Named Inventor	David Alexander
				Group Art Unit	3714
				Examiner Name	John Sotomayor
Sheet	4	of	10	Attorney Docket Number	IMMR023/04US

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
		Number	Kind Code ² (if known)		
		4,767,333		Born	08-20-1988
		4,726,772		Amplatz	02-23-1988
		4,713,007		Alban	12/15/1987
		4,712,101		Culver	12-08-1987
		4,708,656		de Vries et al.	11/24/1987
		4,642,055		Saliterman	02-10-1987
		4,599,070		Hladky et al.	07/08/1986
		4,581,491		Boothroyd	04/08/1986
		4,513,235		Acklam et al.	04/23/1985
		4,490,810		Hon	12-25-1984
		4,459,113		Boscaro Gatti et al.	07-10-1984
		4,409,479		Sprague et al.	10-11-1983
		4,360,345		Hon	11-23-1982
		4,321,047		Landis	03-23-1982
		4,236,325		Hall et al.	12/02/1980
		4,160,508		Salisbury, Jr.	07/10/1979
		3,911,416		Feder	10/07/1975
		3,903,614		Diamond et al.	09/09/1975
		3,902,687		Hightower	09/02/1975
		3,775,865		Rowan	12-04-1973
		3,748,366		Radar et al.	07-24-1973
		3,623,064		Kagan	11/23/1971
		3,541,541		Engelbart	11-17-1970
		3,517,446		Corlyon et al.	06/30/1970
		3,497,668		Hirsch	02/24/1970
		3,304,434		Koster	02-14-1967
		3,226,846		Wood	01-04-1966
		3,220,121		Cutler	11/30/1965
		3,157,853		Hirsch	11/17/1964
		Des. 392,878		Nordstrom et al.	03-31-1988
		Des. 272,833		Van Assche et al.	02-28-1994
		Des. 233,238		Reid et al.	10-15-1974
FOREIGN PATENT DOCUMENTS					
Examiner	Cite	Foreign Patent Document		Name of Patentee or Applicant of Cited	Date of Publication

¹ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).

² For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

³ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible.

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				<i>Complete if Known</i>	
				Application Number	10/657,145
				Filing Date	September 9, 2003
				First Named Inventor	David Alexander
				Group Art Unit	3714
				Examiner Name	John Sotomayor
Sheet	5	of	10	Attorney Docket Number	IMMR023/04US

U.S. PATENT DOCUMENTS							
Examiner Initials* Initials*	Cite No. ¹ No. ¹	U.S. Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	
		Number		Kind Code ² (if known)			
		Office ¹	Number ²	Kind Code ³ (if known)	Document	of Cited Document MM-DD-YYYY	T ¹
		DE	3834-553-A		Germany	04-12-1990	
		EP	0 349 086	A1	Stork Kwant B.V.	01-03-1990	
		EP	0 485 766		Europe	05-20-1992	
		EP	0 800 804		Europe	10-15-1997	
		EP	0 908 836		Europe	04-14-1999	
		EP	0 970 714	A2	Mitsubishi	01-12-2000	
		EP	169-776-A		Europe	01-29-1986	
		FR	2 592 514		France	07-03-1987	
		GB	2 252 656	A	KeyMed	08-12-1992	
		GB	2 288 686	A	University of Bristol	10-25-1995	
		SU	1124-372-A		Soviet Union	11-15-1984	
		SU	1335-994-A		Soviet Union	11-30-1987	
		SU	1732371-A1		Soviet Union	05-07-1992	
		WO	93/08517		WIPO	04-29-1993	
		WO	95/02233		WIPO	01-19-1995	
		WO	95/02801		WIPO	01-26-1995	
		WO	96/16397		WIPO	05-30-1996	
		WO	96/28800		WIPO	09/19/1996	
		WO	98/03954	A1	Colorado Medical Simulators, Inc.	01-29-1998	
		WO	98/10387		WIPO	03-12-1998	
		WO	98/58308		WIPO	12-23-1998	
		WO	99/25536		WIPO	05-27-1999	
		WO	99/38141		WIPO	07-29-1999	

¹ Applicant is to place a check mark here if English language Translation is attached.

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Please type a plus sign (+) inside this box → +

(2 of 2)

PTO/SB/08A (08-00)

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				Complete if Known	
				Application Number	10/657,145
				Filing Date	September 9, 2003
				First Named Inventor	David Alexander
				Group Art Unit	3714
				Examiner Name	John Sotomayor
Sheet	5	of	9	Attorney Docket Number	IMMR023/04US

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ⁶
		ACKERMAN, <i>The Visible Human Project</i> , Proceedings of IEEE, Vol. 86, No. 3, March 1998, pp. 504-511	
		Adelstein et al., "Design and Implementation of a Force Reflecting Manipulandum for Manual Control research," DSC-Vol. 42, <i>Advances in Robotics</i> , pp. 1-12, 1992	
		Adelstein, "A Virtual Environment System For The Study of Human Arm Tremor," <i>Ph.D. Dissertation</i> , Dept. of Mechanical Engineering, MIT, June 1989, archived 3/13/90	
		Baigrie, "Electric Control Loading – A Low Cost, High Performance Alternative," <i>Proceedings of Interservice/Industry Training Systems Conference</i> , pp. 247-254, November 6-8, 1990	
		Bejczy et al., "A Laboratory Breadboard System For Dual-Arm Teleoperation," <i>SOAR '89 Workshop, JSC</i> , Houston, TX, July 25-27, 1989	
		Bejczy et al., "Generalization of Bilateral Force-Reflecting Control of Manipulators," <i>Proceedings Of Fourth CISM-IFTOMM</i> , Sep. 8-12, 1981	
		Bejczy et al., "Kinesthetic Coupling Between Operator and Remote Manipulator," <i>International Computer Technology Conference, The American Society of Mechanical Engineers</i> , San Francisco, CA, August 12-15, 1980	
		Bejczy, "Sensors, Controls, and Man-Machine Interface for Advanced Teleoperation," <i>Science</i> , Vol. 208, No. 4450, pp. 1327-1335, 1980	
		BRO-NIELSEN, <i>Finite Element Modeling in Surgery Simulation</i> , Proceedings of IEEE, Vol. 86, No. 3, March 1998, pp. 490-503	
		Brooks et al., "Hand Controllers for Teleoperation - A State-of-the-Art Technology Survey and Evaluation," <i>JPL Publication 85-11</i> , NASA-CR-175890; N85-28559, pp. 1-84, 03/1/1985	
		Burdea et al., "Distributed Virtual Force Feedback, Lecture Notes for Workshop on Force Display in Virtual Environments and its Application to Robotic Teleoperation," <i>1993 IEEE International Conference on Robotics and Automation</i> , pp. 25-44, 05/02/1993	
		Caldwell et al., "Enhanced Tactile Feedback (Tele-Taction) Using a Multi-Functional Sensory System," 1050-4729/93, pp. 955-960, 1993	
		CHAN et al., <i>Force Feedback for Surgical Simulation</i> , Proceedings of IEEE, Vol. 86, No. 3, March 1998, pp. 524-530	

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				Complete if Known	
				Application Number	10/657,145
				Filing Date	September 9, 2003
				First Named Inventor	David Alexander
				Group Art Unit	3714
				Examiner Name	John Sotomayor
Sheet	6	of	10	Attorney Docket Number	IMMR023/04US

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
		COVER et al., <i>Interactively Deformable Models for Surgery Simulation</i> , IEEE Computer Graphics & Applications, Vol. 13, No. 6, November 1993, pp. 68-75	
		DAWSON et al., <i>The Imperative for Medical Simulation</i> , Proceeding of IEEE, Vol. 86, No. 3, March 1998, pp. 479-483	
		DELINGETTE, <i>Toward Realistic Soft Tissue Modeling in Medical Simulation</i> , Proceedings of IEEE, Vol. 86, March 1998, pp. 512-523	
		Eberhardt et al., "OMAR - A Haptic display for speech perception by deaf and deaf-blind individuals," <i>IEEE Virtual Reality Annual International Symposium</i> , Seattle, WA, Sep. 18-22, 1993	
		Gotow et al., "Controlled Impedance Test Apparatus for Studying Human Interpretation of Kinesthetic Feedback," WA11-11:00, pp. 332-337	
		GUNSBURG, <i>This Shot Won't Hurt At All</i> , Washington Business, July 16, 1998	
		HAHN et al., <i>Training Environment of Inferior Vena Caval Filter Placement</i> , Medicine Meets Virtual Reality, January 1998, pp. 291-296	
		HILL et al., <i>Telepresence Technology in Medicine: Principles and Applications</i> , Proceedings of IEEE, Vol. 86, No. 3, March 1998, pp. 569-580	
		HON, <i>Realistic Medical Simulations</i> , Virtual Reality World, July/August, 1994, p. 59-62	
		Howe, "A Force-Reflecting Teleoperated Hand System for the Study of Tactile Sensing in Precision Manipulation," <i>Proceedings of the 1992 IEEE International Conference on Robotics and Automation</i> , Nice, France, May 1992	
		IBM Technical Disclosure Bulletin, "Mouse Ball-Actuating Device With Force and Tactile Feedback," Vol. 32, No. 9B, February 1990	
		Immersion Human Interface Corporation, <i>Programmer's Technical Reference Manual: Immersion Probe and Personal Digitizer</i> , May 1994, pp. 1-80	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				Complete if Known	
				Application Number	10/657,145
				Filing Date	September 9, 2003
				First Named Inventor	David Alexander
				Group Art Unit	3714
				Examiner Name	John Sotomayor
Sheet	7	of	10	Attorney Docket Number	IMMR023/04US

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
		Iwata, "Pen-based Haptic Virtual Environment," 0-7803-1363-1/93 IEEE, pp. 287-292, 1993	
		JACKSON et al., <i>Force Feedback and Medical Simulation</i> , Interactive Technology and the New Paradigm for Healthcare, January 1995, pp. 147-151	
		Jacobsen et al., "High Performance, Dextrous Telerobotic Manipulator With Force Reflection," <i>Intervention/ROV '91 Conference & Exposition</i> , Hollywood, Florida, May 21-23, 1991	
		Jones et al., "A perceptual analysis of stiffness," ISSN 0014-4819 Springer International (Springer-Verlag); <i>Experimental Brain Research</i> , Vol. 79, No. 1, pp. 150-156, 1990	
		KEGIER, <i>Surgeons Turn to Surgical Simulation Via Virtual Reality to Practice New Procedures</i> , Laproscopy News, November 1994, pp. 6-8	
		Kontarinis et al., "Display of High-Frequency Tactile Information to Teleoperators," <i>Telemanipulator Technology and Space Telerobotics</i> , Won S. Kim, Editor, Proc. SPIE Vol. 2057, pp. 40-50, Sep. 7-9, 1993	
		KRUEGER et al., <i>The Responsive Workbench</i> , IEEE Computer Graphics and Applications, May, 1994, pp. 12-15	
		McAfee et al., "Teleoperator Subsystem/Telerobot Demonstrator: Force Reflecting Hand Controller Equipment Manual," JPL 1988, JPL D-5172	
		MERRIL et al. <i>Virtual Heart Surgery: Trade Show and Medical Education</i> , Virtual Reality World, July/August 1994, pp. 55-57	
		MERRIL et al., <i>Cyber Surgery: Cutting Costs, Sewing Benefits</i> , Virtual Reality Special Report, Summer, 1994, pp. 39-42	
		MERRIL et al., <i>Surgical Simulation Using Virtual Reality Technology: Design, Implementation, and Implications</i> , Surgical Technology International III, Fall 1994, pp. 53-60	
		MERRIL et al., <i>Virtual Reality for Tradeshows and Individual Physician Training</i> , Virtual Reality Systems, Spring 1994, pp. 40-44	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				<i>Complete if Known</i>	
				Application Number	10/657,145
				Filing Date	September 9, 2003
				First Named Inventor	David Alexander
				Group Art Unit	3714
				Examiner Name	John Sotomayor
Sheet	8	of	10	Attorney Docket Number	IMMR023/04US

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
		MERRIL, <i>Virtual and Augmented Reality in Medicine</i> , Proceedings of the IEEE, Vol. 86, No. 3, March 1998, pp. 471-473	
		Minsky, "Computational Haptics: The Sandpaper System for Synthesizing Texture for a Force-Feedback Display," <i>Ph.D. Dissertation</i> , MIT, June 1995, archived 7/6/95	
		OKIE, <i>Out of Body Medicine</i> , Washington Post, November 5, 1996, pp. 12-14, 17	
		Ouhyoung et al., "A Low-Cost Force Feedback Joystick and Its Use in PC Video Games," <i>IEEE Transactions on Consumer Electronics</i> , Vol. 41, No. 3, August 1995	
		Ouh-Young, "Force Display in Molecular Docking," Doctoral Dissertation, University of North Carolina at Chapel Hill, UMI Order No. 9034744, p. 1-369, 1990	
		Patrick et al., "Design and Testing of A Non-reactive, Fingertip, Tactile Display for Interaction with Remote Environments," <i>Cooperative Intelligent Robotics in Space</i> , Rui J. deFigueiredo et al, Editor, Proc. SPIE Vol. 1387, pp. 215-222, 1990	
		Rabinowitz et al., "Multidimensional tactile displays: Identification of vibratory intensity, frequency, and contractor area," <i>Journal of The Acoustical Society of America</i> , Vol. 82, No. 4, October 1987	
		ROSENBERG, <i>Medical Applications of Virtual Reality</i> , Virtual Reality Systems, Vol. 1, No. 3, Spring 1994, pp. 48-50	
		Russo, "Controlling Dissipative Magnetic Particle Brakes in Force Reflective Devices," DSC-Vol. 42, <i>Advances in Robotics</i> , pp. 63-70, ASME 1992	
		Russo, "The Design and Implementation of a Three Degree of Freedom Force Output Joystick," <i>MIT Libraries Archives</i> pp. 1-131, May 1990, archived 8/14/90	
		SATAVA et al., <i>Current and Future Applications of Virtual Reality for Medicine</i> , Proceedings of IEEE, Vol. 86, No. 3, March 1998, pp. 484-489	
		SATAVA, <i>The Role of Virtual Reality in Medicine of the 21st Century</i> , Virtual Reality Systems, Vol. 1, No. 2, Fall 1993, pp. 64-67	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				<i>Complete if Known</i>	
				Application Number	10/657,145
				Filing Date	September 9, 2003
				First Named Inventor	David Alexander
				Group Art Unit	3714
				Examiner Name	John Sotomayor
Sheet	9	of	10	Attorney Docket Number	IMMR023/04US

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
		SHAHIDI et al., <i>Clinical Applications of Three Dimensional Rendering of Medical Data Sets</i> , Proceedings of IEEE, Vol. 86, No. 3, March 1998, pp. 555-568	
		Shimoga, "Finger Force and Touch Feedback Issues in Dexterous Telemanipulation," <i>Proceedings of Fourth Annual Conference on Intelligent Robotic Systems for Space Exploration</i> , Rensselaer Polytechnic Institute, Sep. 30- Oct. 1, 1992	
		SMITH, <i>Scanning the Technology</i> , Proceeding of IEEE, Vol. 86, No. 3, March 1998, pp. 474-478	
		Snow et al., "Model-X Force-Reflecting-Hand-Controller," NT Control No. NPO-17851; JPL Case No. 7348, pp. 1-4 with 45 pages of attachments, 06/15/1989	
		SOFERMAN et al., <i>Advanced Graphics Behind Medical Virtual Reality: Evolution of Algorithms, Hardware, and Software Interfaces</i> , Proceedings of IEEE, Vol. 86, No. 3, March 1998, pp. 531-554	
		Stanley et al., "Computer Simulation of Interacting Dynamic Mechanical Systems Using Distributed Memory Parallel Processors," DSC-Vol. 42, <i>Advances in Robotics</i> , pp. 55-61, ASME 1992	
		Tadros, "Control System Design for a Three Degree of Freedom Virtual Environment Simulator Using Motor/Brake Pair Actuators," <i>MIT Archive</i> , pp. 1-88, February 1990, archived 8/13/90	
		TAUBES, <i>Surgery in Cyberspace</i> , Discovery, December 1994, pp. 85-94	
		Terry et al., "Tactile Feedback In A Computer Mouse," <i>Proceedings of Fourteenth Annual Northeast Bioengineering Conference, University of New Hampshire</i> , March 10-11, 1988	
		Marcus, "Touch Feedback in Surgery," <i>Proceedings of Virtual Reality and Medicine The Cutting Edge</i> , Sep. 8-11, 1994	
		Bejczy, et al., "Universal Computer Control System (UCCS) For Space Telerobots," CH2413-3/87/0000/0318501.00 1987 IEEE, 1987	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.